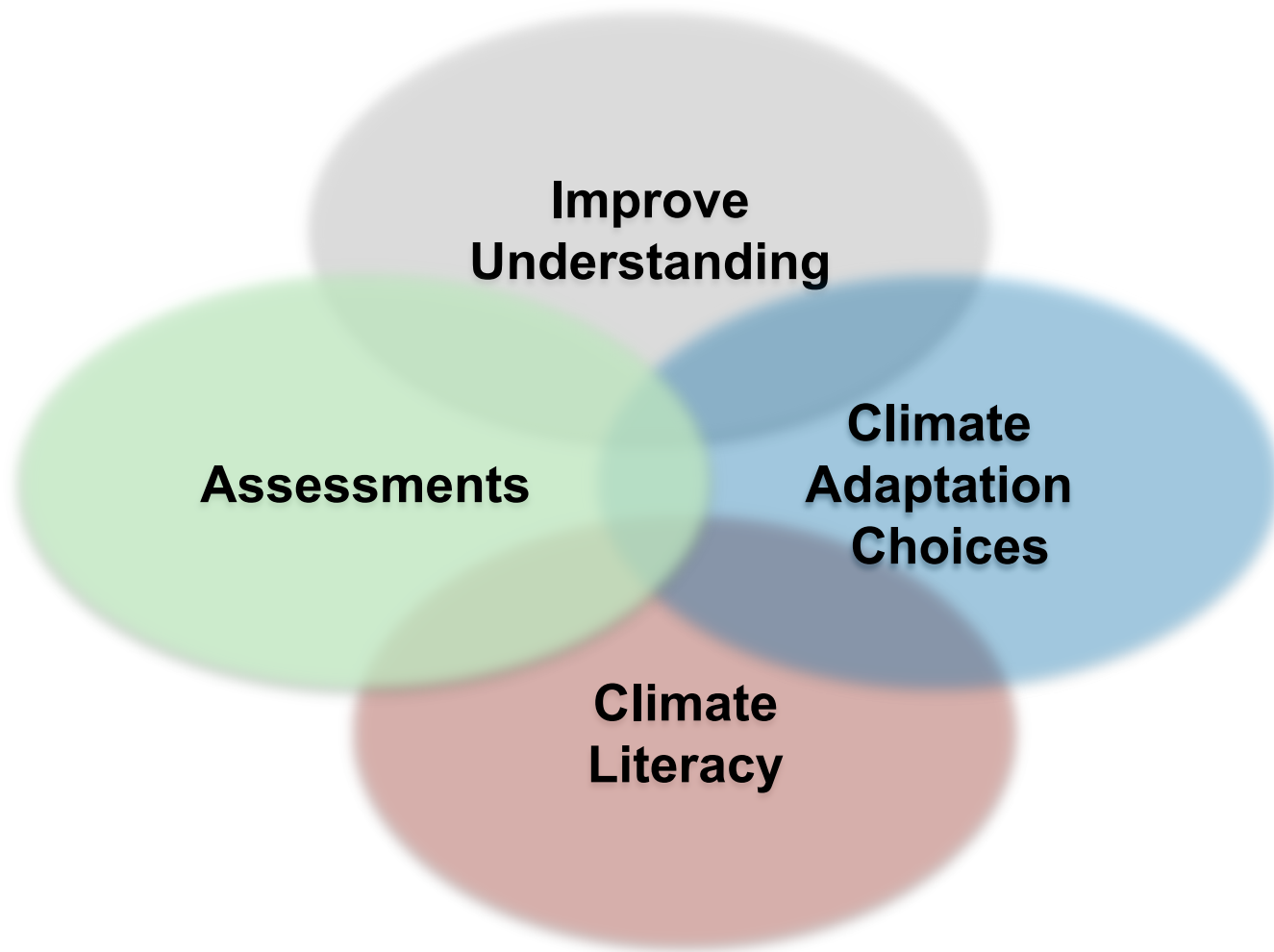


NOAA Climate Goal

An informed society anticipating and responding to climate and its impacts





Informing Decisions

Climate and Societal Interactions

Developing and implementing information systems to support adaptation decisions across climate timescales (weather extremes, variability and change)

Identifying and Assessing Risks and Impacts:

Identify and characterize impacts of climate variability and change

Informing Decisions:

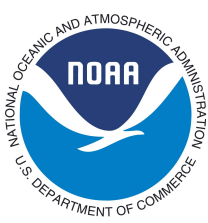
Assess & Improve the accessibility and utility of information to meet user needs

Building Capacity:

Engage federal and non-federal partners to align research and practice to inform decision making



INFORMING CLIMATE ADAPTATION CHOICES: What are the types of decisions being made?

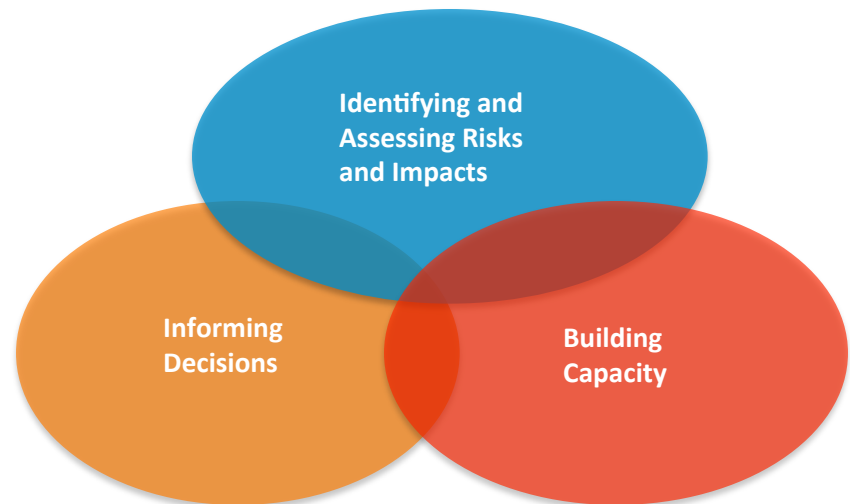


Informing Decisions

Climate and Societal Interactions

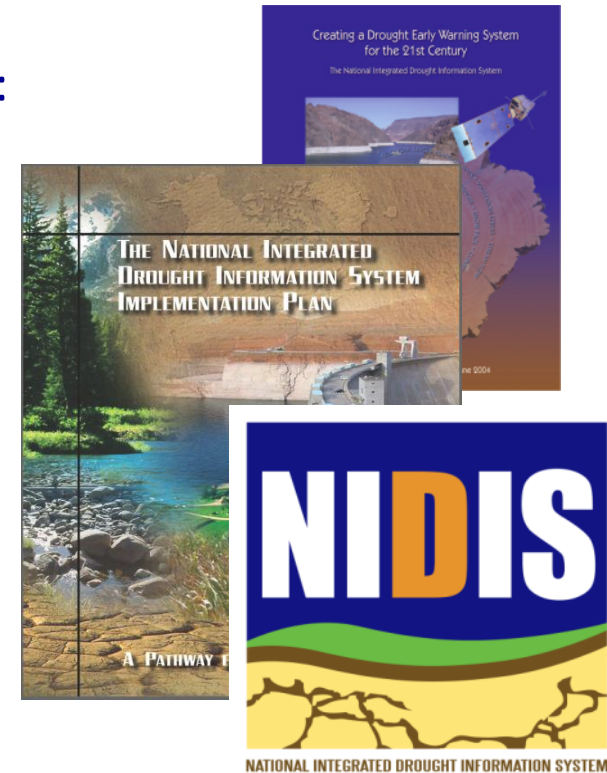
The key research areas bridge basic or systemic research, applied research on impacts, and adaptation research that mainstreams predictive and risk assessment into planning, decision-making and practice.

- NIDIS** National Integrated Drought Information System
- RISA** Regional Integrated Sciences and Assessment
- SARP** Sectoral Applications Research Program
- COCA** Coastal Oceans and Climate Applications
- IRAP** International Research Applications Program



National Integrated Drought Information System: Public Law 109-430

- (I) Provide an effective drought early warning system that:
 - (a) collects and integrates information on the key indicators of drought and drought severity; and (b) provides timely information that reflect state and regional differences in drought conditions;
- (II) Coordinate Federal research in support of a drought early warning system; and,
- (III) Build upon existing forecasting and assessment programs and partnerships



But-“Enable the Nation to move from a reactive to a more proactive approach to managing drought risks and impacts”-still in question



Informing Decisions

National Integrated Drought Information System

Drought Portal: www.drought.gov

CPO/NIDIS Office (& NOAA Partners)

Regional Drought Early Warning Systems (RDEWS) Implementation

- Colorado Basin, California sub-basins, Southeast
- Regional Drought Outlook Fora across the US (ESRL, RCCs, RCSD, CSC, NWS)

Coping with Drought

- Impacts assessment and decision support research grants (RISA, SARP)

Climate Forecast Test-Beds

- Integrating monitoring and forecasting (CPC, RFCs, CPO/MAPP)



“...the drought forecasts issued by the National Integrated Drought Information System, are very useful to farmers, water planners, and other state and local officials.”

—Rep. Ralph Hall (R-Tex) (6-22-2011)

NIDIS-Across NOAA



Scientific
Knowledge development
and Management

***MONITORING &
FORECASTING
(CPC, PSD, ARL, NCDC)***

Impacts Assessment and
Decision support tools

***DEVELOPMENT &
PROTOTYPING
(RISAs, RFCs, RCCs, CSC)***

Capacity and Coordination: Deliver
products, webinars, outlooks

***SERVICES
COORDINATION &
DELIVERY
(RFCs, RCSDs, WFOs, SCs)***



NOAA Drought and Water Resources Federal Partnerships (also State, Tribal, other)



Monitoring & Prediction



US Army Corps
of Engineers.



Drought and Flood Impacts Assessments and Scenarios



Drought Information Systems



Communication and Outreach



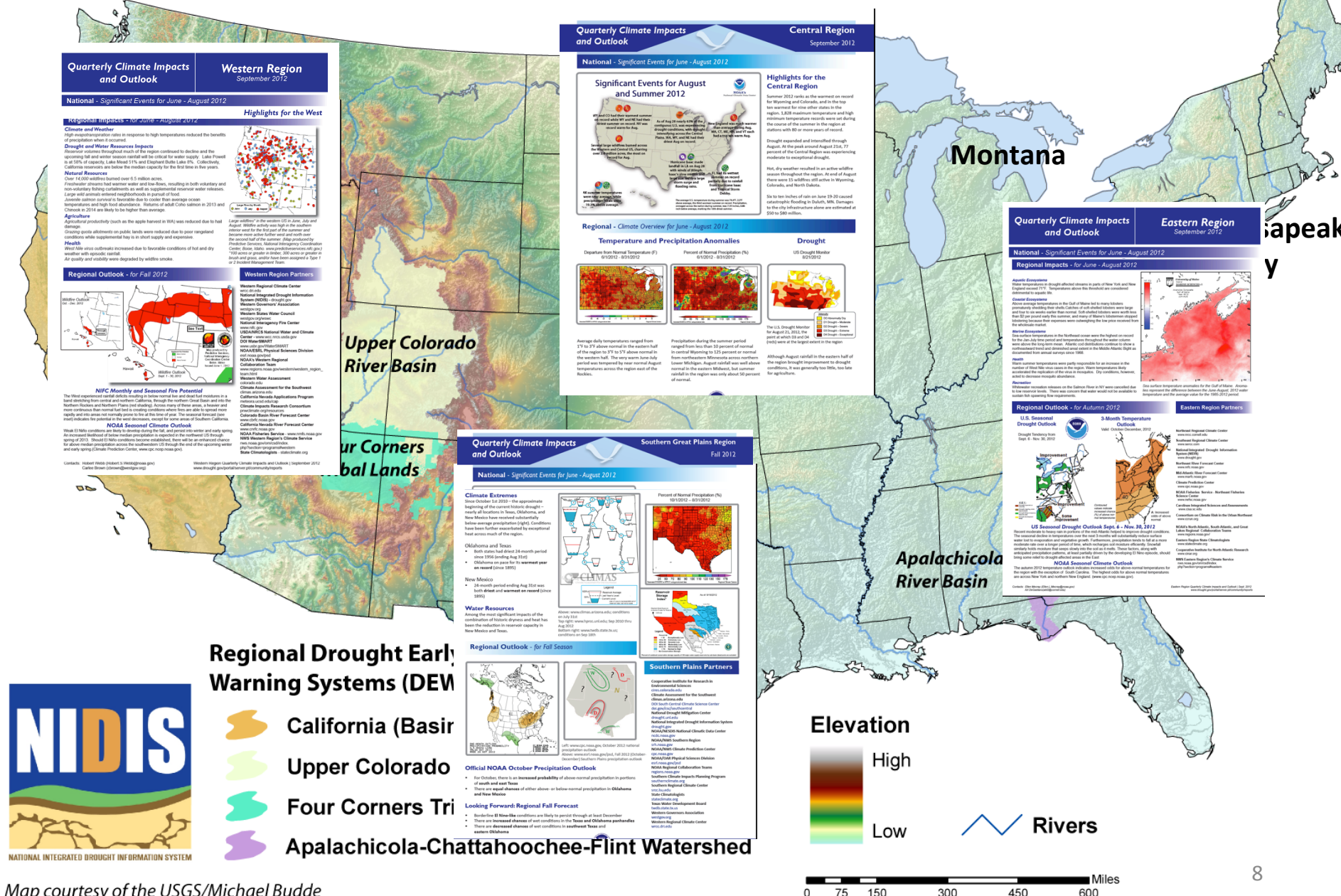
US Army Corps
of Engineers.



Information in support of Preparedness



National Integrated Drought Information System (NIDIS) Regional Drought Early Warning Systems



How did we get here? Status and antecedent conditions

Is this drought like others? Why has it been dry?

What are the impacts and where are they occurring?

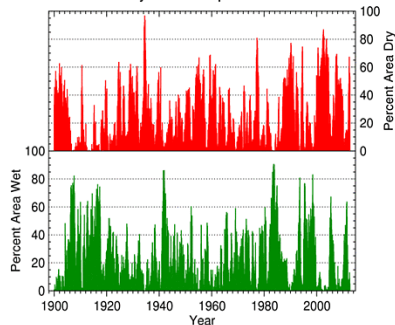
What information is being provided and by whom?

Are information needs being met?

How are we planning for next year?



Western U.S. Percentage Area Wet or Dry
January 1900 - September 2012



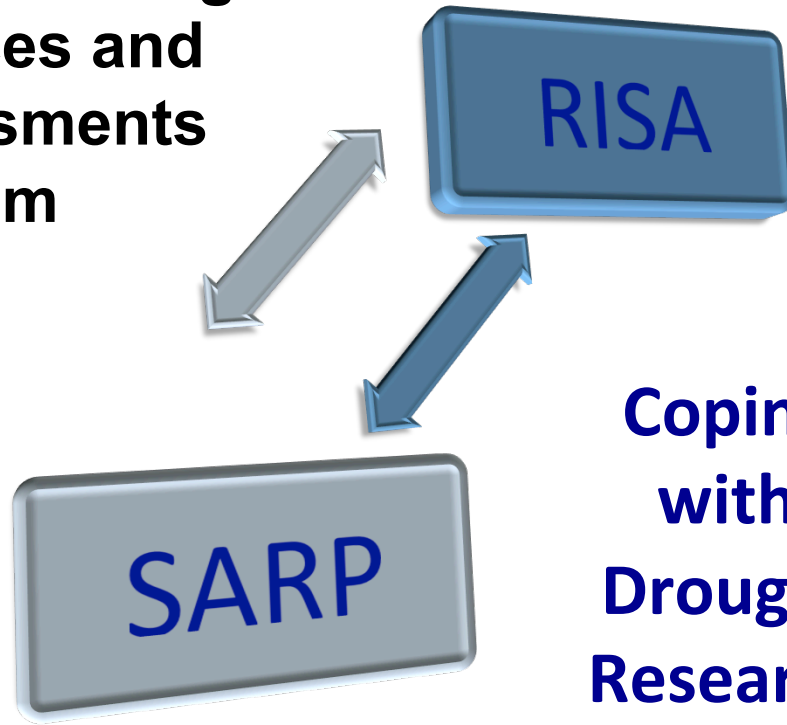
*Based on the
Palmer Drought Index

■ Moderate - Extreme Drought
■ Moderate - Extreme Wet

National Climatic Data Center / NESDIS / NOAA



Regional Integrated Sciences and Assessments Program

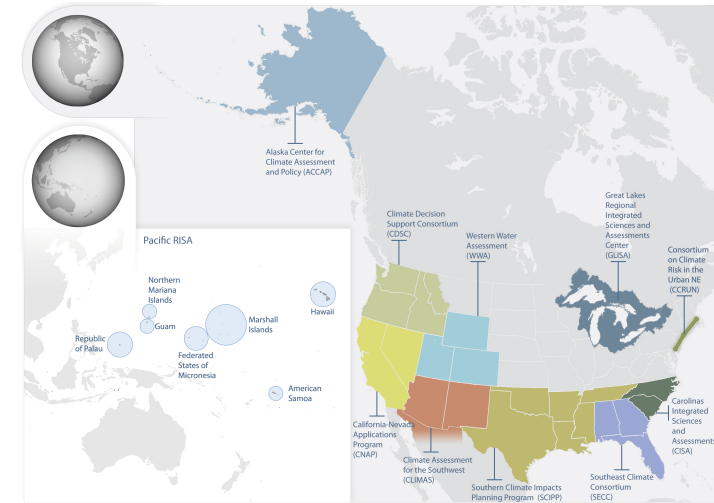


Coping with Drought Research

Sectoral Applications Research Program

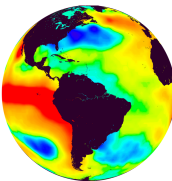
Identify *socio-economic effects of drought and *data and info needs of resource managers and policy/decision makers

Support cross-regional efforts to assess user needs, test drought-focused decision support tools



Evaluate and transition drought information products to operations

Regional Climate Centers
State Climatologists
Regional Climate Services





Informing Decisions

Sectoral Applications and Research Program

Sectoral Applications Research Program (SARP) addresses the needs of stakeholders within key climate-sensitive socioeconomic sectors; in **FY12, SARP is focusing on water resources and extreme events.** This program:

- Provides a better **understanding of the climate-related risks/opportunities** sector managers and planners face, and **assess their needs for decision-support tools, data, and information services;**
- Produces/provides cutting-edge knowledge, tools, methodologies, and forums to help plan **adaptation and mitigation strategies in accordance with their priorities and values;**
- Infuses scientific information about climate risks and uncertainties into **societal decision-making processes**
- Promotes **partnerships** between the climate science and decision-making communities to improve societal use of climate data, forecasts, and projections.



"SARP is premised on the belief, in which we concur, that decision makers defined by resources or decision functions often have common needs for climate-related information...SARP... represents an important part of this underemphasized area (use of social science to achieve mission objectives) of the CCSP."

—Source: National Research Council (2008). "Research and Networks for Decision Support in the NOAA Sectoral Applications Research Program."
Helen M.Ingram and Paul C. Stern, Editors



Informing Decisions -- RISA

Regional Integrated Sciences and Assessment Program

RISA supports primarily university-based research teams that help build the nation's capacity to prepare for and adapt to climate variability and change. The teams work with public and private user communities to:

- Understand decision contexts for using climate information
- Develop actionable knowledge through interdisciplinary research
- Maintain diverse, flexible networks for sharing knowledge
- Innovate services to enhance the use of science in decision making

MANAGING DROUGHT
IN THE SOUTHERN PLAINS

You are invited to join us in a webinar (web-based seminar) series to discuss drought conditions, impacts and resources available to help manage drought in the Southern Plains. Webinars will be held on the 2nd Thursday of each month at 11:00 A.M. Central Time. A shortened briefing will also be offered on the 4th Thursday. The content is geared toward a general audience – anyone who has responsibility to manage or assist others in managing drought and its related impacts.

If you would like to join in these webinars, you need to register via the SCIPP website: <http://www.southernclimate.org> or e-mail scipp@mesonet.org. For each webinar, you will receive an e-mail with the link to access the webinar. Each webinar will last 45-60 minutes.

Each webinar will include an overview of the current drought assessment and outlook, summary of impacts across the region, and a topic or resource, such as La Niña or wildfire conditions. You will have an opportunity to suggest topics for following webinars. The primary focus is in the states most heavily impacted from the current drought - Texas, Oklahoma and New Mexico – but participation from surrounding states is encouraged.

The webinar series is sponsored by a partnership of the National Integrated Drought Information System (NIDIS), National Oceanic and Atmospheric Administration (NOAA), National Drought Mitigation Center, Southern Climate Impacts Planning Program, Climate Assessment for the Southwest, and the region's State Climatologists.

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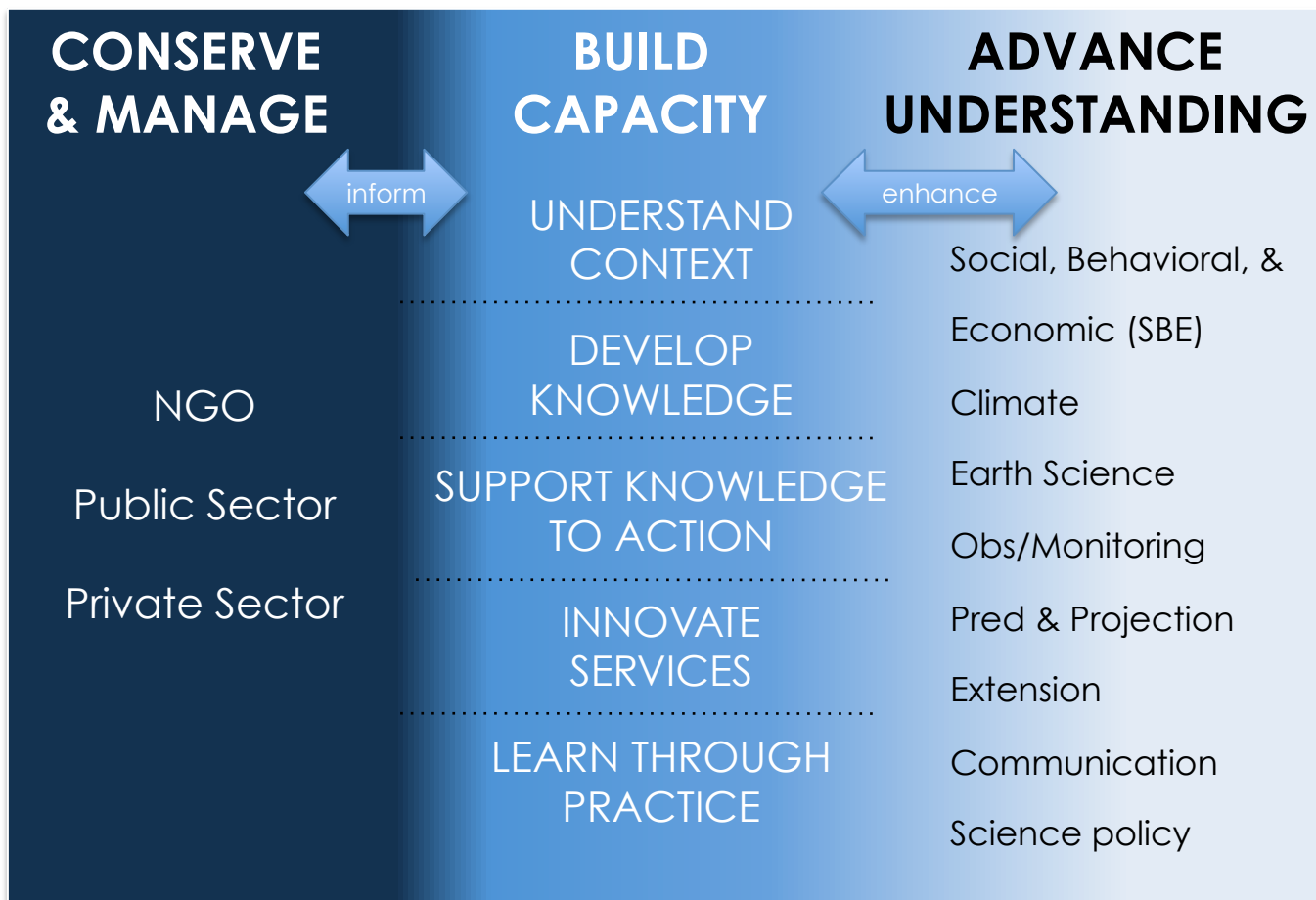
To register or for more information, contact:
Southern Climate Impacts Planning Program
<http://www.southernclimate.org>
405-325-2541 or scipp@mesonet.org

Webinar Topics:

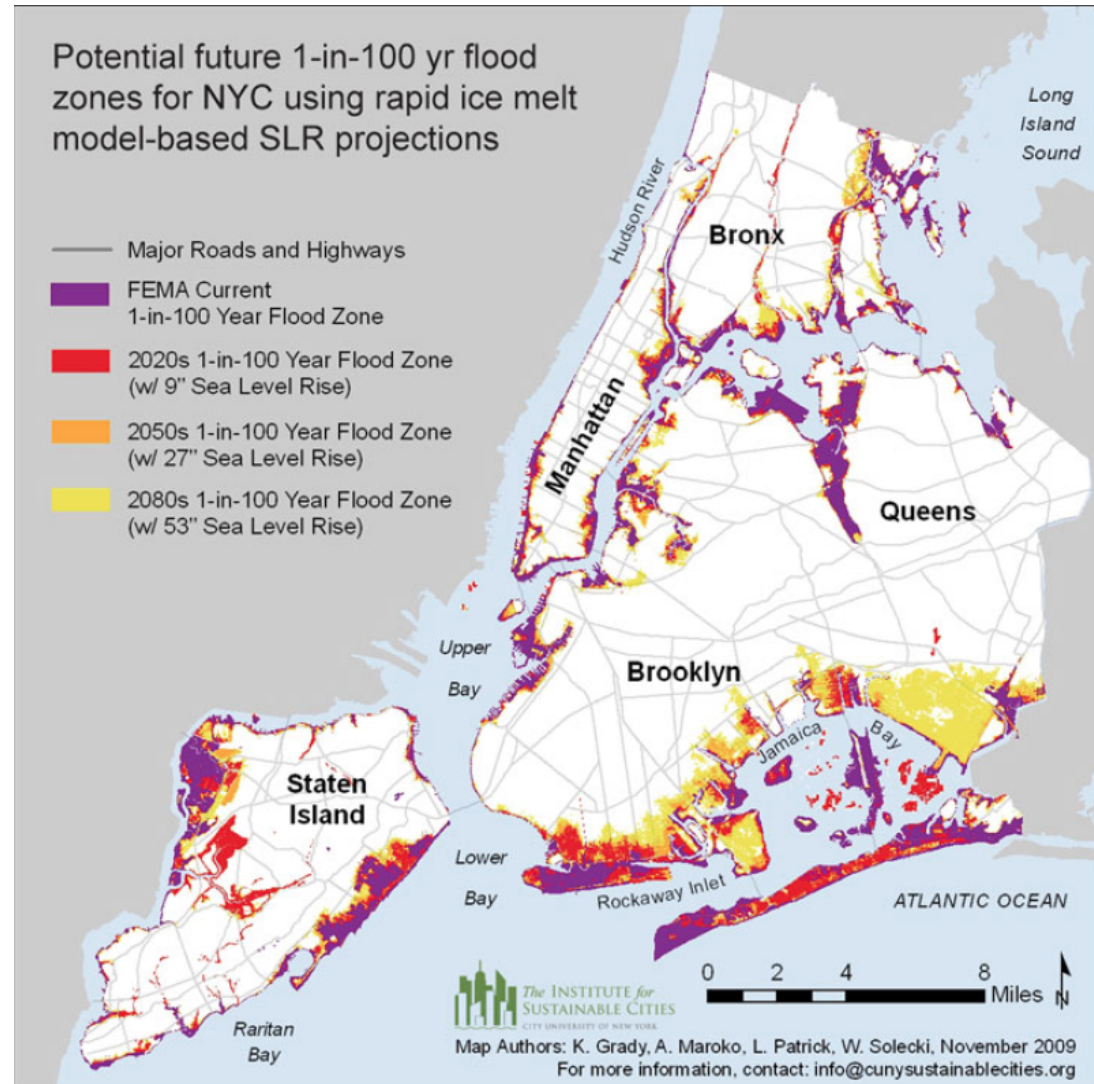
- La Niña
- Cattle & Livestock
- U.S. Drought Monitor
- Ecological Impacts
- Seasonal Forecasting
- Flash Drought
- Water Supply
- Wildfire
- Drought Ready Communities
- Agricultural Impacts



RISA Capabilities



New York City Panel on Climate Change





FY12 RISA FFO

Research Partnerships in Support of Regional Climate Adaptation

Opportunity for local, state, and regional agencies to partner with RISA research teams on specific projects

Connected RISAs with national agency reps of USDA, EPA, USFS, and NOAA NMFS in proposal development phase

Focused on capacity development:

1. Coastal and Marine Climate Adaptation
 2. Water Resource Management and Planning
 3. Land Management
- Over 6 different agencies participated

Proposal Title	RISA	Partner	
Water Reservoir Data Visualization Tools	SCIPP	NCDC	
Building Organizational Capacity to Adapt to Climate Change on Public Lands in the PNW	CIRC	USFS	
Mapping the Flow of Climate and Water Information in the Pacific Islands	Pacific RISA	USGS CSC	
Use of seasonal climate forecasts to minimize short-term operational risks for water supply and ecosystem restoration	SECC	SE Water Utilities	
Climate and Weather Services for Disaster Management	CLIMAS	FEMA	
A Water Management Knowledge Network for the Northeastern US	CCRUN	NCDC	
Building Climate Science into Land and Water Conservation Planning/Decision Making in SW	WWA	The Nature Conservancy	

★ Partner contributions— 8% interagency funding (plus in-kind support) helps ensure commitment and extends utility of project to partner organization (i.e. TRANSFER OF CAPACITY)



FY13 RISA Federal Funding Opportunity

Research Partnerships in Support of Regional Climate Adaptation.

Expand regional capacity for:

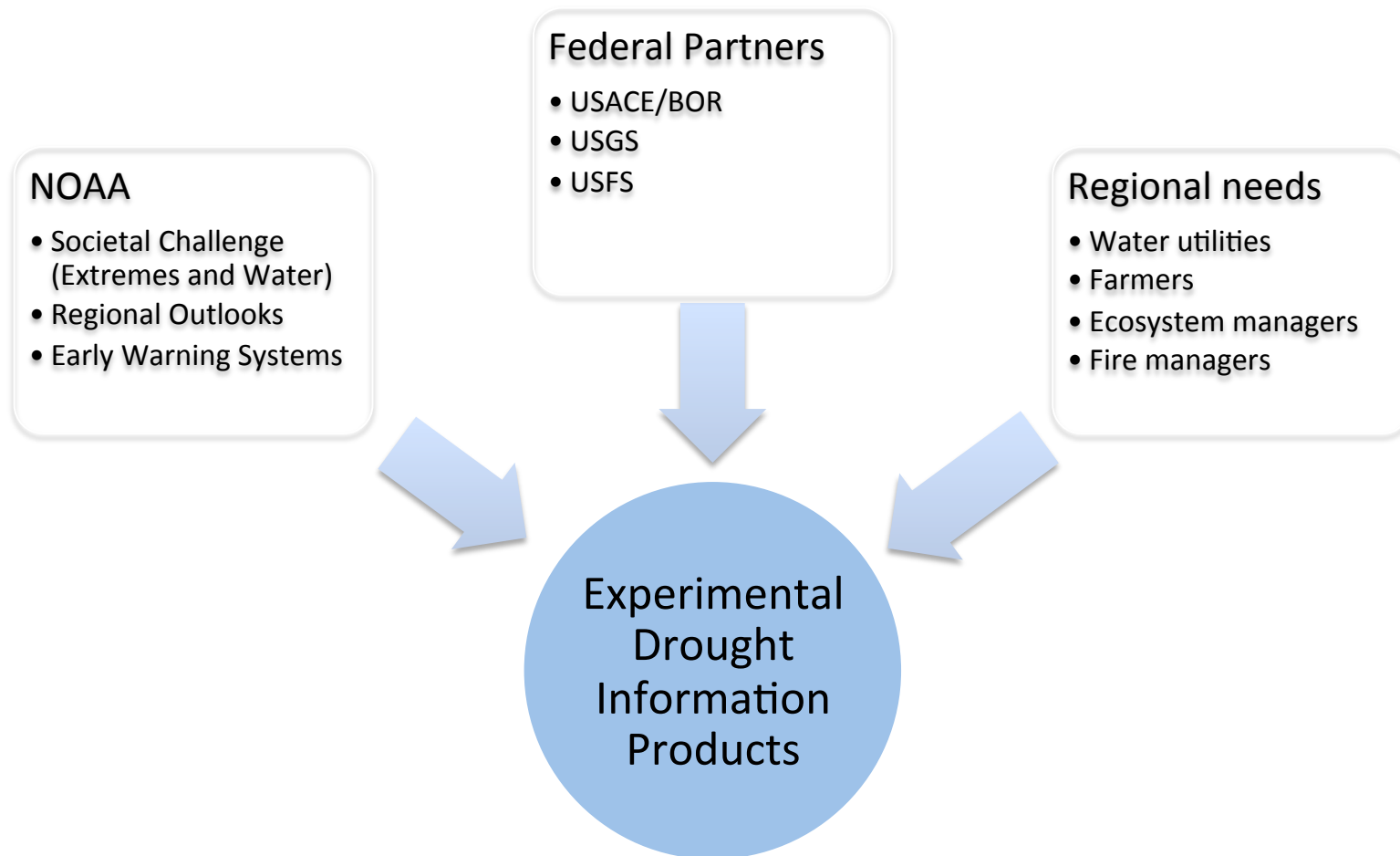
- 1) Coastal Flooding in Urban Communities
- 2) Scenario and Management Planning (includes NPS, USFS and BLM)
- 3) Climate Impacts on Marine Ecosystems
- 4) Experimental Drought Information Products

** RISA team member needs to be one of the lead PIs on a proposal submitted to this FFO



How did we choose priorities?

Drought Example





Climate Goal's "Societal Challenges" – Drought and Water Resources

Dimensions of the Challenge: a "Requirements" framework: (1) Knowledge development and management, (2) Product and services delivery, (3) Capacity development and coordination

- Improve forecast reliability for drought and flood (onset, duration, severity) given decadal-scale and longer-term forcings including drivers of differences in seasonality under conditions of nonstationarity (1)
- Diagnose the role of precipitation events and land surface conditions in amplifying or reducing the severity of drought and flood impacts (1)
- Develop timely, accessible communication tools (e.g. regional and sub-regional outlooks) to inform preparedness and adaptation in the climate-sensitive water resources sectors (to support water, food and energy security) (2)
- Employ existing cross-sectoral (interagency, state, private and tribal) partnerships to improve coordination for prioritizing and advancing monitoring, forecasts and impacts assessment of surface and groundwater interactions to inform drought and flood risk management from watersheds to coast (3)

Are we better off?

- The number of states, communities, and institutions with improved capacity to inform risk management and reduce exposure to climatic risks
- The number of staff in or working with those institutions trained to develop and communicate local drought information and help reduce impacts
- The number of research projects that conduct and update drought impacts and user needs assessments in drought-sensitive parts of the US and
- The percentage of the Western U.S. population covered by adequate climate risk and early warning information systems



Balancing Regional/National Priorities



Regional Priorities

- Drought
- Outdated water rights
- Knowledge gaps
- Evolving conditions
- Assessment



Competitive Research

- Mutual priorities
- Science policy innovations
- Focused, traceable projects



United States Global Change Research Program



National Priorities

- Mission/Mandate
- Core capabilities
- Funding
- USGCRA



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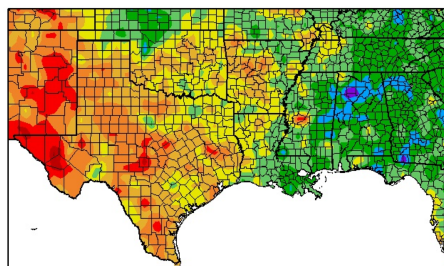
- La Niña
- Cattle & Livestock
- U.S. Drought Monitor
- Ecological Impacts
- Seasonal Forecasting
- Flash Drought
- Water Supply
- Wildfire
- Drought Ready Communities
- Agricultural Impacts



NIDIS-RISA/SCIPP holding bi-weekly discussions of the drought and its impacts, on the 2nd and 4th Thursdays of each month at 11:00 a.m. Central Time.

Departure from Normal Temperature (°F)
8/1/2012 – 8/31/2012

T

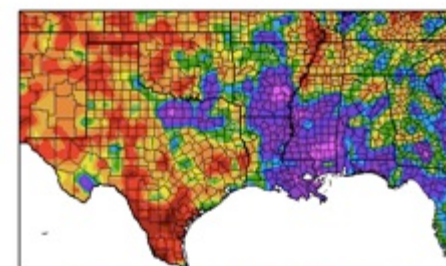


Generated 9/11/2012 at HPRCC using provisional data.

Regional Climate Centers

Percent of Normal Precipitation (%)
8/1/2012 – 8/31/2012

P



Generated 9/11/2012 at HPRCC using provisional data.

Regional Climate Centers

Departures from 1971-2000 normal average temperatures and precipitation for August 2012, across the South.

Coping with Drought – Sample funded projects

Develop hydroclimatic reconstructions for water resources management (PNW)

Develop climate training workshops targeting Extension Agents/Farm Bureaus (OK,TX)

Paleoclimatic Information for Drought Planning and Decision Making (AZ,CA)

Link NOAA climate forecasts to dynamic vegetation models to produce seasonal predictions for fire management (NV)

Reconciling CO Basin projections (Cross-RISA; projections Colorado River to 2050)

Drought decision support portal for the Republican River Basin (NE,KS)

